Suborbital and Special Orbital Projects Directorate
830/Aircraft Office

NASA Airborne Science Program
Pre-Mishap Plan

for NASA Aircraft
assigned to and managed by the
Goddard Space Flight Center (GSFC)
Aircraft Office

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National Aeronautics and
Space Administration

Goddard Space Flight Center
Wallops Flight Facility

Check the GSFC Aircraft Office Homepage at http://wacop.wff.nasa.gov/AOSafe.cfm
to verify that this is the correct version prior to use

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BACKGROUND

This program pre-mishap plan establishes the actions, along with assigned responsible personnel, required to effectively and safely respond to and mitigate the effects of an aircraft mishap involving NASA aircraft assigned to and managed by the NASA GSFC Aircraft Office, Code 830, at NASA's Wallops Flight Facility (WFF).

This program pre-mishap plan is developed under the authority of NPR 8621.1 and GSFC 803-PLAN-001. The NPR 8621.1 describes NASA's requirements for mishap response. The GSFC 803-PLAN-001B is the center pre-mishap plan which describes procedures and responsibilities for aircraft mishap response on or in the vicinity of WFF. This program pre-mishap plan carries the actions to the point that the event has been rendered safe and is turned over to the investigating authority.

Since it is difficult to cover all of the various situations that may arise during aircraft emergencies, this plan shall not restrict in any way the use of good judgment by the on-scene commander.

Comments and questions concerning the contents of this plan should be addressed to the Aircraft Office, Code 830, Wallops Flight Facility, Wallops Island, Virginia 23337. This is a controlled plan and will be reviewed annually and revised by page changes when necessary.

APPLICABILITY: This plan applies to Goddard Space Flight Center (GSFC) personnel, as well as to other NASA support personnel, contractors, and business partners, in accordance with cooperative agreements and contractual requirements.

AVAILABILITY: This plan is posted at http://wacop.wff.nasa.gov/AOSafe.cfm.
Copies have been distributed to personnel with responsibilities required by this plan.

NASA GSFC WFF
Aircraft Mishap Response Checklist

Upon initial mishap notification, the following checklist shall be initiated & completed by the NASA aviation safety officer (ASO) for GSFC. On deployments, the mission manager shall initiate & complete the mishap response checklist. The mission manager shall also ensure that a copy of this plan is with the mission ground crew. Each of these individuals shall lead the IRT until properly relieved by higher authority, as well as designate a trained alternate backup. The backup for the NASA ASO will be the most senior pilot available from the NASA Aircraft Office.

1. Ensure Fire and Rescue personnel are at the mishap site - Save lives First! Call 911. Ensure fire & rescue personnel are notified immediately and are verified to be on site saving lives and preventing further damage.
2. Ensure Security personnel are at the mishap site - Duties are: keep unauthorized personnel away from rescue efforts, protect the site/equipment from further damage, and preserve evidence. Wear PPE at the mishap site.
3. Deploy an initial response team (IRT), if appropriate - The team shall start a log of activities, gather basic facts using UND or NASA mishap info sheets, wear appropriate PPE at site, assist in completion of this checklist.
4. Make Initial Notifications
    a. Contact the NASA ASO(757-894-2826/3898). NASA ASO will contact NASA Management& PAO(757-824-1031/1202), NASA Safety(757-824-2518), NASA HQ(202-358-2219), NTSB (VA 571-223-3930), FAA VA (804-222-7494), and OSHA plus business partners, if appropriate.
    b. After initial phone contact, NASA Form 1627 shall be used for NASA notification and NTSB form 6120, if applicable, shall be filled out and submitted to the NTSB as per NASA NPR 8621.1.
5. Ensure Safety at Mishap Site – Ensure the mishap site is safe. Hazards should be briefed to all personnel at the mishap site. Make sure appropriate PPE is used. Make a log entry for every person who enters the site. Hazards could be chemicals, explosives, radioactive, biological, fuel, pressure vessels, compressed air, batteries, hydraulics, accumulators, igniters, oxygen bottles, fire bottles, flares, chutes, composites, and tires.
6. Photographic/Video Support – Take lots of photo/video from various angles to include airborne if possible. Photos should be repeated as the scene will change over time or when items are moved, potentially revealing new evidence. Document and videotape ground scars and the actual moving/recovery operations.
7. Release of Information (See NASA NPR 8621.1 Section 3.10)
    a. Next of Kin Notification – Make sure this step happens before any public release of information. Notification by appropriate senior management assisted by aviation personnel & life crisis professionals.
    b. Press Release – ASO or IRT lead will provide initial info through NASA WFF management to PAO for release to public. Release shall be coordinated with program business partners, if applicable.
8. Witness Statements/Interviews – Write down a list of witnesses. Include their name, address, phone numbers, & emails. Review NPR 8621.1 guidance before interviews. Gather written personal(not group) statements from witnesses and all individuals involved as soon as possible.
9. Wreckage Diagram – Make a diagram before things are moved. Tag, photograph, and log (to include location coordinates) of all items. Computer/graphic support will help. Walk runways for items of evidence before movement of anything. Spray paint locations, if necessary, before key items are moved.
10. Impound Data – Assign people to collect and lock up appropriate maintenance/aircrew records, aircraft logbooks, Tower/ATC Tapes, WX data lines, and any other aircraft data pertinent to the mishap. Originals, if available.
11. Drug Testing – See NPR 8621.1. Any mishap over $10K of damage requires that supervisors should initiate drug testing for appropriate personnel involved in the mishap. Provide an escort for personnel to testing facility.
12. Airport Closure – Ensure a decision is made regarding whether to suspend flight operations or a portion of the flight operations at the mishap airport, as well when to re-open. Consider location of nearest suitable alternate.
13. Aircraft removal/recovery from mishap site/runways – The On-scene Commander and/or the Lead Investigator must approve the removal of all mishap equipment. Depending on the severity of the mishap, additional time and resources may be required to remove the aircraft from the mishap site/runways and recover it.
14. Suspension of safety critical duties – Consideration should be given to temporarily suspending safety critical duties for personnel involved in a class A or B mishap.

NASA Mishap Info Sheet

Provide as much of the following information as possible when reporting a mishap to the NASA ASO.

1. Person Reporting Accident/Mishap_____
   a. Telephone numbers_____
   b. Location for follow up questions_____
2. List fire, rescue, medical, and security personnel on scene
3. List others who have been notified, if any.
4. Date and Time of Mishap_____
5. Location – give:
   a. General area(building,etc)_____
   b. Exact location(room number, etc) _____
6. Description of Mishap
7. Personnel Injuries – describe each person and their level of injury
8. Aircraft, Equipment, or Property Damage description – describe type and level of damage for each
9. Persons Involved - include names, duties, employer, and contact info(address/phone number).
10. Aircraft Involved – list all type and tail numbers
11. Witnesses - provide name, address, phone numbers, & location during accident.
12. Weather Conditions
13. NTSB reportable data – may be required for certain mishaps(See NASA NPR 8621.1)

1. Type, nationality, and registration marks of the aircraft.
2. Name of owner and operator of the aircraft.
3. Name of the pilot in command.
4. Date and time of the mishap, malfunction, or failure.
5. Last point of departure and point of intended landing of the aircraft.
6. Position of the aircraft with reference to some easily defined geographical point.
7. Number of persons aboard and number killed or seriously injured.
8. Nature of the mishap or occurrence, the weather, and the extent of damage to the aircraft, so far as is known.
9. A description of any explosives, radioactive materials, or other dangerous articles carried.

GSFC WFF Flight Ops Aircraft Mishap First Response

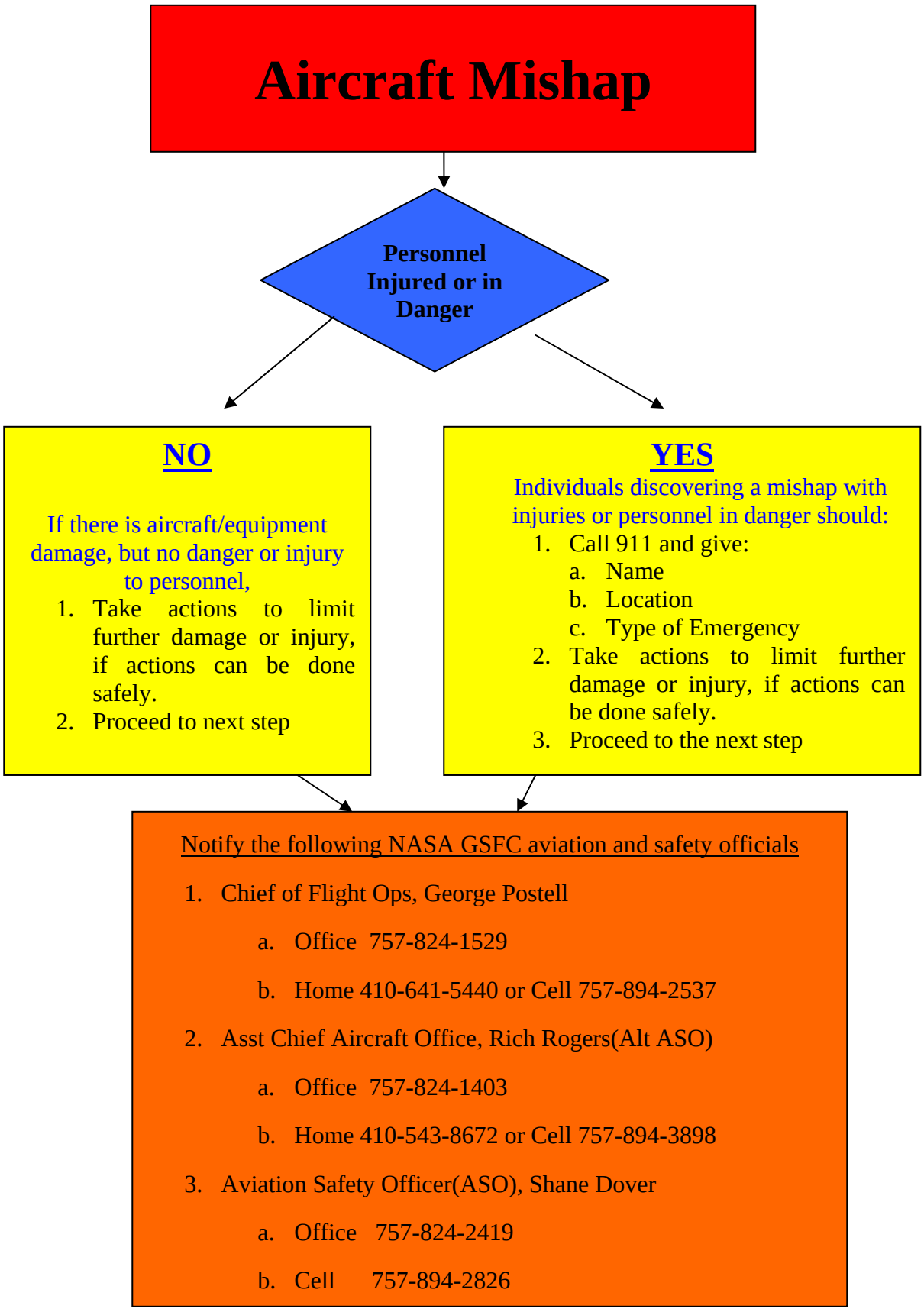

Figure 1 - NASA Mishap Categories

Classification Level & Investigation Type	Property Damage	Injury
Type A Mishap	Total direct cost of mission failure and property damage is $1,000,000 or more, ***or*** Crewed aircraft hull loss has occurred, ***or*** Occurrence of an unexpected aircraft departure from controlled flight (except high performance jet/test aircraft such as F-15, F-16, F/A-18, T-38, and T-34, when engaged in flight test activities).	Occupational injury and/or illness that resulted in: A fatality, ***or*** A permanent total disability, ***or*** The hospitalization for inpatient care of 3 or more people within 30 workdays of the mishap.
Type B Mishap	Total direct cost of mission failure and property damage of at least $250,000 but less than $1,000,000.	Occupational injury and/or illness has resulted in permanent partial disability. ***or*** The hospitalization for inpatient care of 1-2 people within 30 workdays of the mishap.
Type C Mishap	Total direct cost of mission failure and property damage of at least $25,000 but less than $250,000.	Nonfatal occupational injury or illness that caused any workdays away from work, restricted duty, or transfer to another job beyond the workday or shift on which it occurred.
Type D Mishap	Total direct cost of mission failure and property damage of at least $1,000 but less than $25,000.	Any nonfatal OSHA recordable occupational injury and/or illness that does not meet the definition of a Type C mishap.
Close Call	Total direct cost of mission failure and property damage is less than $1,000 ***or*** An occurrence or condition of employee concern in which there is no property damage but possesses the potential to cause a mishap.	Minor injury requiring first aid which possesses the potential to cause a mishap ***or*** An occurrence or condition with no injury but possesses the potential to cause a mishap.

Figure 2. NASA Mishap Responsibilities Matrix

Responsible Party	Administrator	AA/OSMA	OIG	EAA	AA/OPA or Advisor	CD, Director, HQ Ops.	Program/Project Mgr	Responsible Org.	Appointing Official	Endorsing Official	Ex Officio	Chairperson	Investigating Authority	Advisors	Consultants	IRT	Incident Commander Emergency Response	Center Safety Office	Security	Supervisors	Employees	Chief of Aircraft Ops.	Contracting Officers	CHMO	AMO	Office of General Counsel
Readiness to Conduct Investigations																										
Develop mishap NPD/NPR and verify implementation		P																								
Develop procedures for collateral investigations																										P
Implement NPD/NPR 8621.1 for Enterprise				P		S																				
Develop program pre-mishap plan				S			P											S								
Develop Center pre-mishap plan						P												S								
Write contract clauses and ensure compliance						S												S					P			
Establish guidelines for release of information					P																					
Develop mishap investigation training		P																S								
Initial Response to Mishap or Close Call																										
Immediately notify emergency response and supervisor																					P					
Notify Center safety office																				P	S					
Initially safe and secure mishap site								S								S	P	S	S	S						
Initiate Center pre-mishap plan																		P								
Initiate program pre-mishap plan	*						P											S								
Within 1 hour notify HQ of Type A, B, high visibility mishap, or high visibility close call																		P								
Notify public of potential hazards, release info.					P	S										S		S								
Impound and secure records and hardware																S		P	S	S						
Initiate drug testing																S		S		P						
Collect witness statements																S		P								
Notify NTSB of aircraft mishaps																		S				P				
Within 8 hours notify OSHA if required																		P								
Within 24 hours send notice to HQ (when applicable) and ensure data recorded in IRIS																		P		S						
Select Investigating Authority and Support																										
Determine level of investigation	*	C*		C*		P																				
Serve as the appointing official	*			*		*																				
Appoint investigating authority	*	C		*		*			P																	
Concur on MIB membership		P																								
Assist investigation as requested						P	S	S	S									S		S	S					
Provide funding for investigation				P		*	*																			
Mishap Investigation Process																										
Conduct investigation											S	P	P	S	S	S										
Investigate criminal activity associated with mishaps and close calls			P																							
Release mishap site to restore operations												P	S													
Mishap Report																										
Within 75 workdays, develop, complete preliminary review, and sign mishap report											P	P	P	S												
Release investigating authority from duty									P																	
Review & endorse mishap report **(20 workdays)**	*	*				*			P	P													*	*		
Approve or reject mishap report **(5 workdays)**									P																	
Authorize mishap report for public release **(10 workdays)**					P				S																	*
Distribute mishap report **(10 workdays)**		*				P																				
Post-Investigation Activities																										
Develop CAP **(15 workdays)**							P	P																		
Review and approve CAP									P																	
Implement CAP							P	P																		
Verify CAP completed and close out CAP							S	S	S									P								
Develop & submit lessons learned **(10 workdays)**							P	P	S																	
Write mishap investigation completion statement									P																	
Retain records																										

First 24 hours after mishap

75 workdays after mishap

135 workdays after mishap CAP concurrent w/distribution

Key: * = May be primary. Depends on Level of Investigation. P = Primary, S = Support, C = Concurs.

Additional NPR 8621.1 Notification & Reporting Requirements for Aircraft Investigations

NASA employees shall report immediately to the Center safety office and the Center ASO any of the aircraft mishaps or anomalies described in Figure 1 below.

Figure 3.
NASA Aircraft Close Calls and Mishaps Required to be Reported Immediately to the NTSB

All Aircraft
o Flight control system malfunction or failure.
o All aircraft accidents with substantial damage.
o Inability of any required flight crewmember to perform normal flight duties as a result of injury or illness.
o Failure of structural components of a turbine engine, excluding compressor and turbine blades and vanes.
o In-flight fire.
o Aircraft collision in flight.
o Damage to property other than the Agency aircraft.
For large multiengine aircraft (more than 12,500 pounds maximum certificated take-off weight)
o In-flight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces.
o Sustained loss of the power or thrust produced by two or more engines.
o An evacuation of an aircraft in which an emergency egress system is used.
o An aircraft is overdue and is believed to have been involved in a mishap or close call.

Figure 4: Initial Information Required for All Agency Aircraft Mishaps and Close Calls

10. Type, nationality, and registration marks of the aircraft.
11. Name of owner and operator of the aircraft.
12. Name of the pilot in command.
13. Date and time of the mishap, malfunction, or failure.
14. Last point of departure and point of intended landing of the aircraft.
15. Position of the aircraft with reference to some easily defined geographical point.
16. Number of persons aboard and number killed or seriously injured.
17. Nature of the mishap or occurrence, the weather, and the extent of damage to the aircraft, so far as is known.
18. A description of any explosives, radioactive materials, or other dangerous articles carried.

Employees shall report unexpected aircraft departure from controlled flight for all aircraft except the following high performance jet/test aircraft which can experience departure from controlled flight when engaged in flight test activities: F-15, F-16, F/A-18, T-38, and T-34. These aircraft are exempt because it is a common occurrence for a high performance jet/test aircraft that does dynamic maneuvering to depart from controlled flight.

Immediately after the occurrence of an aviation mishap, or NTSB-defined mishap or close call, the Center aircraft operator shall provide all the information listed in Figure 4 above to the Center safety office, the center ASO, and the Center Chief of Aircraft Operations.

The Center safety office shall notify HQ S&MA and AMO of any aircraft mishap or close call as defined by paragraph 1.2, paragraph 1.6.2, and Figure 3 of NPR 8621.1, and ensure that all information listed in Figure 4 above is entered on the appropriate form in IRIS.

The Center's Chief of Aircraft Operations or his/her designee shall immediately notify the NTSB of any aircraft mishap (as defined in Figure 3 of this NPR), incident, or close call as defined in Figure 3 and paragraph 1.6.2 of 8621.1 and in accordance with 49 CFR Part 830 and notify HQ S&MA that NTSB notification has been completed.

In the event that the NTSB exercises its authority to investigate a NASA aircraft mishap, NASA shall conduct a separate investigation in accordance with this NPR.

Within 10 workdays of an aircraft mishap or close call that meets the reporting requirements as defined in Figure 3 and paragraph 1.6.2 of NPR 8621.1, the Center Chief of Aircraft Operations shall submit an NTSB Form 6120 to the NTSB regional office nearest to the location of the mishap or close call.

An unmanned aerial vehicle (UAV) is not currently considered an aircraft by the NTSB, consequently NTSB reporting requirements are not applicable to a UAV unless personnel are injured or the UAV comes down in a populated area outside a Center's gates.

AIRCRAFT MISHAP RECALL ROSTER

1. Fire and Rescue Department	
a. Wallops Flight Facility	911 or 757-824-1333
b. Deployed Mission Sites	911 or closest local facility identified in mission plan
2. Security	
a. Wallops Flight Facility	911 or 757-824-1333
b. Deployed Mission Sites	911 or closest local facility identified in mission plan
3. Shane Dover, NASA Aviation Safety Officer(ASO)	757-824-2419(Office) 757-894-2826(Cell)
4. Rich Rogers, NASA Asst. Aircraft Office Chief (Alternate ASO)	757-824-1403/1031 (Office) 757-894-3898 (Cell)
5. George Postell, Aircraft Office Chief (Alternate backup to NASA ASO)	757-824-1529/1031 (Office) 757-894-2537 (Cell)
6. Ed Sudendorf, NASA Airport Mgr/Maint	757-824-1240/1031 (Office) 757-894-3753 (Cell)

C**HANGE HISTORY LOG**

Revision	Effective Date	Description of Changes
Baseline	Sep 12, 2008	This plan updates the GSFC procedures to comply with current NASA mishap response requirements as outlined in NPR 8621.1.